

Application No. 10/750,826
Amendment dated August 1, 2007
Reply to Office Action of April 25, 2007

Docket No. 3313-1089P
Art Unit: 2609
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REMARKS

The Applicants thank the Examiner for the thorough consideration given the present application. Claims 1-7, 9, and 10 are pending. Claims 1 and 9 have been amended, and claim 8 has been cancelled without prejudice or disclaimer. The Examiner is respectfully requested to reconsider the rejections in view of the amendments and remarks set forth herein.

Claim for Priority

It is gratefully appreciated the Examiner has acknowledged the Applicants' claim for foreign priority.

Drawings

Applicants thank the Examiner for accepting the drawings.

Amendments to the Specification

In order to overcome the Examiner's objection to the title, the title has been changed to "IMAGE CHROMATISM COMPENSATION METHOD FOR ADJUSTING IMAGE DISPERSION DISTANCES OF AN IMAGE." Reconsideration and withdrawal of any objection to the title are respectfully requested.

Rejections under 35 U.S.C. §102(e) and 103(a)

Claims 1 and 4-10 stand rejected under 35 U.S.C. §102(e) as being anticipated by Sawada et al., U.S Patent 7,142,238. This rejection is respectfully traversed.

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Claims 2 and 3 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Sawad in view of Abe, U.S. Patent 6,829,004. This rejection is respectfully traversed.

Independent claim 1 of the present application sets forth a method in which a reference mark image is captured at first, then the reference mark image is divided into a predetermined channel, a first other channel, and a second other channel. The image dispersion distance between the two reference marks of the reference image in the three aforementioned channels are then obtained. Finally, the image dispersion calibration ratio is computed and stored. When capturing an image, the stored image dispersion calibration ratio is used to make adjustments of the image dispersion distances in the first and second other channels, as shown in FIG. 3-b. In other words, the image dispersion distances in the first other and the second other channels are multiplied by the stored image dispersion calibration ratio. Thus, the image dispersion distances in the first other channel and the second other channel both become the same as that in the predetermined channel. This solves the image chromatism problem.

On the other hand, Sawada et al. merely perform image chromatism compensation by determining shift amounts of every pixel. The shift amount of a pixel is determined by luminance values of the pixel and the adjacent two pixels. The shift amount is evaluated by an evaluated equation (as shown in Fig 5C). Therefore, the shift amount is an evaluated value, not an actual value obtained by measuring the shifting distance of the pixel.

Furthermore, the present application uses the reference mark as a reference distance, and measures or determines the image dispersion distances of each channel, and then calibrates image dispersions according to the image dispersion distances. The image dispersion distances in

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each channel are actual values, so that the image chromatism compensation effect of this application is better than that of the Sawada et al.

Moreover, the present application adjusts image dispersion distances in a predetermined area according a corresponding reference at once. Such an adjusting process is simple and fast. On the contrary, Sawada et al. merely adjust image dispersion distance of every pixel in a predetermined area one by one, and such a adjusting process is complex and slow.

In summary, the invention of the present application determines image dispersion distance between the two reference marks in each channel, and then computes image dispersion calibration ratio for calibrating the image at once. The image dispersion distances are determined directly by counting number of pixels among the two reference marks in each channel.

On the other hand, Sawada et al. evaluates the shift amount of EACH pixel by luminance values of the pixel and the adjacent two pixels. That is, the shift amount of EVERY PIXEL of an image has to be evaluated. Such a process is complex and time-consuming. Furthermore, as the shift amount is evaluated, the accuracy of the shift amount or the image calibrating effect is also negatively affected.

In view of the foregoing amendments and remarks, it is respectfully submitted that the prior art utilized by the Examiner fails to teach or suggest the method of independent claim 1, as well as its dependent claims. Reconsideration and withdrawal of the 35 USC 102 and 103 rejections are respectfully requested.

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CONCLUSION

Favorable reconsideration and an early Notice of Allowance are earnestly solicited.

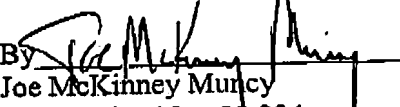
Because the additional prior art cited by the Examiner has been included merely to show the state of the prior art and has not been utilized to reject the claims, no further comments concerning these documents are considered necessary at this time.

In the event that any outstanding matters remain in this application, the Examiner is invited to contact the undersigned at (703) 205-8000 in the Washington, D.C. area.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

Dated: August 1, 2007

Respectfully submitted,

By 
Joe McKinney Muncy
Registration No.: 32,334
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000
Attorney for Applicant

KM/CTT/ASC 